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ABSTRACT

The idea that Asian Americans constitute a "model minority" needing no special help with education or employment is quite widespread, even amongst government officials. This "model minority" thesis has not been investigated empirically, in part because of the lack of a theoretical construct. An interdisciplinary model focusing on educational and income variables has yet to be designed to empirically isolate the negative factors inhibiting the full and equal participation of Asian Americans in the United States economy. The first step toward such a goal is provided in this paper, which focuses on social indicators of education. Discussed in two preparatory sections are: (1) inputs-process-outputs model of education aimed at determining levels of well-being; and (2) the shortcomings of social indicators of education, especially as they refer to minority groups. These sections are followed by a discussion of what is currently the most developed and applied economic model, in the context of an inputs-process-outputs framework, for analyzing interracial, interethnic, and intersex earning differentials. It is proposed that the same model be extended to education so that factors inhibiting the full and equal participation of minority groups may be empirically verified. The earnings differential model is analyzed in detail to clarify how the extension to an education differential model might be accomplished. (CMG)

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SOCIAL INDICATORS OF EDUCATION AND THE MODEL MINORITY THESIS

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SOCIAL INDICATORS OF EDUCATION AND THE MODEL MINORITY THESIS

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This subject can be best introduced by the following quote from the popular press (Seligman):

"Chinese-Americans and Japanese-Americans have long presented a peculiar problem to the bureaucracy. Because they have unmistakably suffered discrimination in recent decades, they have become officially priveleged: the contract-compliance officials, the Equal Employment Opportunity Commission, and the civil-rights folks in the Department of Health, Education and Welfare all have programs that give special preferences, in employment or education, to Oriental Americans...However, all the evidence suggests that Oriental Americans should be non-preferred. In fact, they should be even more non-preferred than whites.

According to the 1970 Census data, both Japanese-Americans and Chinese-Americans have received more schooling on average than whites, have lower unemployment rates than whites, have higher incomes than whites, and are far more likely to hold the prestigious professional and technical jobs. Yet the bureaucracy continues to create those preferences.

We assume that a few more anomalies may surface before the Supreme Court gets us all into racial balance."

As documented by previous researchers (Hune; Kim; Suzuki), the idea that Asian Americans constitute a "model minority" is quite widespread. That it has filtered through the bureaucracy, thus negating even the extensive quotation above, is evident from a Commission on Civil Rights draft proposal report (U.S. Commission on Civil Rights, 1977): "During a discussion about why no Federal support had been obtained for developing bilingual models for Chicago's Asian American children, CCR Project staff was told that Asian Americans have 'made it,' implying that there is relatively no need." Further in the report another incident is recounted:

"...in a September 1976 letter addressed to Project staff, then Bureau Director Vincent P. Barabba suggested that the APIA (Asian and Pacific Island Americans) populations may be well counted, perhaps as well counted as the White population. The Bureau Director's assertion is based on the belief that the relatively high educational achievement level enjoyed

by Asian Americans has resulted in high response rates to census questionnaires."

And still another:

"In 1975, a local craft union which was operating under court imposed minority hiring goals was recently directed by the State (New York) to ignore Asian Americans waiting to be placed into training programs and recruit other minority members instead. This position of the State Division of Human Rights was ultimately based on the State's requirements and the outdated 1970 Asian American unemployment figures, the only one available. As the New York SAC Chairperson and Vice-Chairperson explained in written testimony to the House Subcommittee on Census and Population in June, 1976, 'While the suspicion seems reasonable that Asian Americans now suffer far higher unemployment rates than they did in 1970, such cannot be verified until the Bureau devises a methodology appropriate to sampling for small groups or racial minorities.' "

And finally citing a study by Lavender and Forsyth which found that only 6.6% of 482 articles published in three leading U.S. sociological journals since 1900 focused on Chinese and Japanese-Americans, the CCR notes:

"If the social analysts and theoreticians have shown only passing interest toward APIA cultures and communities, is it any wonder that the frontline practitioners -- teachers, welfare workers, law enforcement officers, senior center counselors -- have lacked a firm knowledge base upon which to structure their own professional interaction with APIA populations?"

It is in part due to the lack of a theoretical construct that the model minority thesis has remained uninvestigated empirically. This position does not deny the existence of such incisive works as Suzuki's revisionist analysis (Suzuki, 1977), or Young's human capital investment study (Young, 1977). What is suggested here is that an interdisciplinary model focusing on education and income variables has yet to be designed to isolate empirically the negative factors inhibiting the full and equal participation of Asian Americans in the U.S. economy.

This paper is the first step towards such a goal. An empirically verifiable model is presented after preparatory sections are discussed concerning: (1) the centrality of

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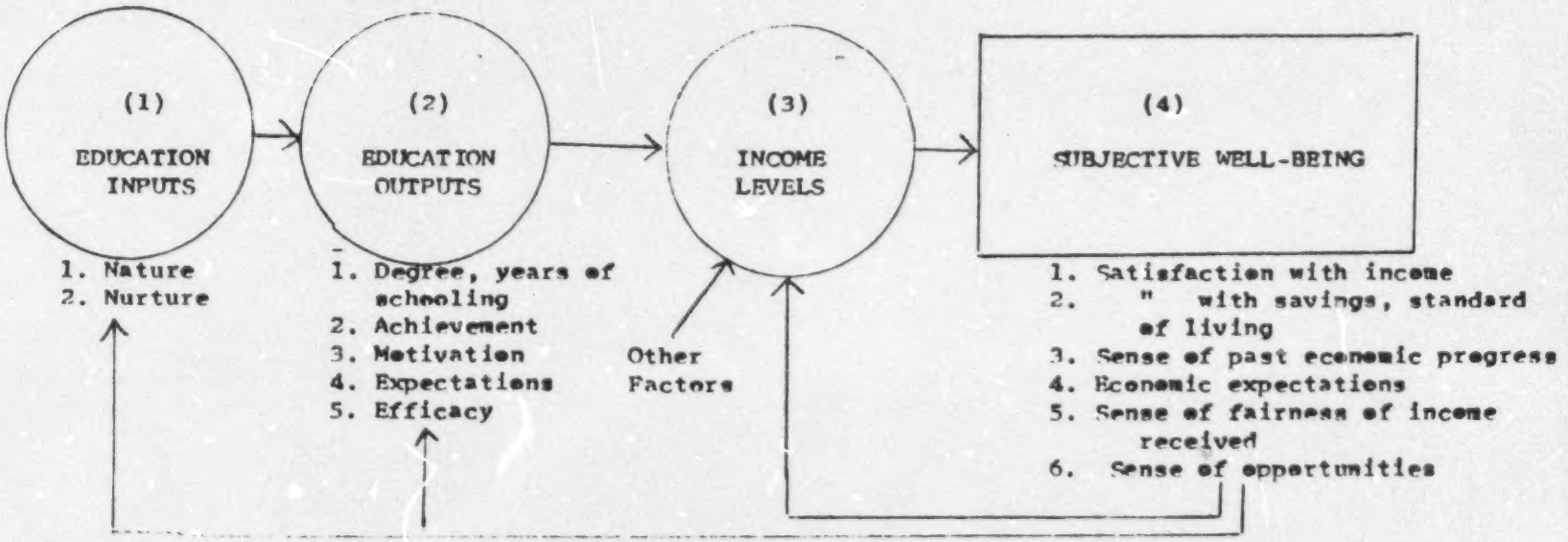
FIGURE I: A GENERAL FRAMEWORK FOR ANALYZING THE WELL-BEING OF MINORITY GROUPS IN THE CONTEXT OF EDUCATION AND INCOME VARIABLES



(1) Education inputs have been extensively discussed in a similar context for Asian Americans in Macaranas, Federico M., "Education and Income Inequality Among Asian Americans," Paper presented at the First National Conference of the National Association for Asian and Pacific American Education, San Francisco, April 25-27, 1979.

(2) Education outputs are discussed at length by Boardman, Anthony E., et. al, "A Simultaneous Equations Model of the Education Process," Journal of Public Economics, Vol. VII (1977), and Astin, Alexander W., "The Measured Effects of Higher Education," The Annals of the American Academy of Political and Social Science, Vol. 404 (November 1972).

(3) Income levels are determined not only by education but by other labor market conditions as well. See text for a discussion of the factors singled out by the Commission on Civil Rights.

(4) Subjective well-being factors are explored in Strumpel, Burkhard, ed., Economic Means for Human Needs: Social Indicators of Well-Being and Discontent (Ann Arbor, Michigan: University of Michigan, 1976).

education in an input-process-output relationship aimed at determining levels of well-being, and (2) the shortcomings of social indicators of education especially as they refer to minority groups.

Inputs-Process-Outputs Relations

It may not be difficult to find out that the very people accepting the model minority thesis are those who are most vocal against the policy norm of equality of results. For example, the quotation that opened this paper comes from a writer whose conservative viewpoints cannot accomodate the realities of twentieth century solutions to twentieth century problems. Note that all the 1979 Census data cited by this person in effect are outcomes of certain processes. In citing these data he is in fact arguing that results be made the basis for establishing policy distinctions between those to be preferred and non-preferred. However, taken independently of inputs and processes, equality of results appears too Pyrrhic a victory for minority groups.

Consider the development of equity concepts in the American educational system (Gilmartin, 1979). The concept of equality of results relative to each student's potential for learning suggests that resources cannot be infinitely channeled to certain groups because of the cost effectiveness constraints (NCES, 1978). This concept was a direct offshoot of the inequality generated by differential effects of schooling, earlier corrected by actions emanating from judicial pronouncements that "separate but equal" facilities did not lead to equality of opportunity. These ideas are quite a school of thought away from the initial American concept of equality of educational opportunity which consisted of (1) providing a free education up to a given level, (2) providing a common curriculum for all children, (3) providing that children from diverse backgrounds attended the same school, and (4) providing equality of resources within a given locality since local taxes supported schools.

The progression of equality concepts in education thus started from basic education <u>inputs</u> passively provided for by schools and the state, then expanded to include the education <u>process</u> itself insofar as it generated unequal results based on the common curriculum, and finally to its present interpretation of equal <u>results</u> that must be actively sought for by schools themselves. All of these are defective from a systems viewpoint because dynamic relations will eventually create disparities in inputs and outputs; equality of opportunity should instead be taken from a holistic inputs-process-outputs perspective, not from isolated aspects

which the various stages of the development of equity concepts had undergone.

A schematic diagram relating education, income, and well-being can illustrate the point that equality of results is meaningless when feedbacks or interaction are considered. Figure I illustrates the fact that the very inputs to education may come from subjective indicators of well-being which are outputs of the income and environmental process themselves. An ethnic group's experience as defined by the entire system does not therefore start from an "uncaused cause." The variables affecting educational outputs come from cyclical and interactive relations where the distinction between inputs and outputs vanish -- the classic "chicken-or-egg" problem.

This framework for analyzing education and income levels is very much in the spirit of the criticism against the portrayal of Asian Americans "primarily as passive victims rather than participating members in U.S. society" (Hune, p. 19). Largely due to the interactive variables, it can thus be said that high income and education levels do not necessarily mean high levels of well-being, a negation of the implications of the model minority thesis. This of course remains to be verified empirically.

Social Indicators of Education

A. The Commission on Civil Rights Report

Most indicators compiled by government agencies concerning education show a bright picture for Asian Americans only because they fail to account for bimodal distributions (Chi) and to recognize a more general framework of analysis similar to the Figure I presented above. An investigation of the data for Asian Americans in the Commission on Civil Rights on social indicators of inequality (see Table I) reveals that isolated numbers for certain indicators may be misused by readers, thus prodding the following remarks from the Commission (p. 26):

TABLE I

Social Indicators of Equity in Education for Asian Americans, Raw Measures for 1960, 1970, and 1976

			Chinese	Japanese	Pilipinos	Majority
(1)	Delayed education: percent of 15-, 16-, and 17-year olds who are two or more years behind the model grade for their age on April 1	1960	M 13	5*	14	18
			F 6	8*	3*	10*
		1970	M 10	4*	13	12
			F 9	1*	7*	6*
		1976	M NA	8	7	10
			F NA	1*	3	7*
(2)	High School non-attendance: percent of 15-, 16-, and 17-year olds who were not enrolled in school on April 1	1960	M 9	2*	12	18
			F 14	3*	7*	12*
		1970	M 6	6	8	9
			F 9	6	9	8
		1976	M NA	2	6	5
			F NA	1*	10	6
(3)	High School completion: percentage of persons from 20 to 24 years of age who have completed 12 or more years of school	1960	M 84*	89*	81*	69
			F 82*	84*	76	70
		1970	M 90*	94*	77*	83
			F 88*	94*	84	82
		1976	M 88	98*	81	87
			F 90	99*	78*	86
(4)	College completion: percentage of persons from 25 to 29 years of age who have completed at least 4 years of college	1960	M 49*	39*	19	20
			F 26	13*	16	9*
		1970	M 58*	39*	28*	22
			F 42*	31*	50*	14*
		1976	M 60*	53*	34	34
			F 44*	35	51*	22*

TABLE I (CONT'D)

			Chinese	Japanese	Pilipinos	Majority
(5) High School over-qualification: percent of high school graduates who are employed in occupations which require less than a high school degree	1960	M	34.6*	51.8*	62.6*	40.2
		F	27.2*	44.5*	35.8	33.4*
	1970	M	33.8*	43.4*	49.3*	37.6
		F	25.7*	35.4*	33.2*	29.9*
	1976	M	43.3	48.4*	49.5*	44.2
		F	48.3	50.8*	34.8*	49.0*
(6) College over-qualification: percent of persons with at least 1 year of college who are employed in occupations which typically require less education than they have	1960	M	48.2	52.4*	48.1	42.7
		F	39.0	32.3*	37.1	29.8*
	1970	M	38.3*	44.3	45.1	41.7
		F	34.5*	35.0*	38.2	24.7*
	1976	M	51.3*	49.4*	56.2*	44.7
		F	51.2*	41.1*	39.6	45.4
(7) Earning differential for college-educated: median earnings of those with 4 or more years of college who had some earnings during the year	1959	M	5589	5250	3713	6833
		F	487	1999	1667	1739
	1969	M	9068	10045	7793	10651
		F	1875	2171	3875	1943
	1976	M	12790	14253	13091	15165
		F	6421	8383	9038	8106

NA indicates that a value was not reported due to an insufficient sample size.

* indicates that the difference between this value and the majority (male) benchmark is statistically significant at the 0.10 level.

Source: Social Indicators of Equality for Minorities and Women, A Report of the United States Commission on Civil Rights, August 1978.

"Although the Asian American groups do not experience the same disparities in college attainment, their relative disadvantage is slipping over time. In addition, it is clear that the greater educational attainment of the Asian American populations does not result in increased financial rewards compared to majority males, as would be expected if everything else were equal."

Indeed, the model minority appellation may be dangerously inferred from all the education indicators: lower social indicator values exist for Asian Americans in delayed education, high school nonattendance, and earnings differential for college-educated persons. Similarly, larger values compared to majority males exist for high school completion and college completion. High school overqualification (except for Chinese) and college overqualification indicators are the only ones that suggest that not all may be going well for Asian Americans, although these may imply cultural differences in non-pecuniary valuation of education to some with stereotypic perceptions.

All the education indicators fail to indicate well-being because no inputs or causal factors leading to the outcomes are measured at all. Instead, emphasis is placed on results. For example, in the discussion of delay rates, the Commission notes that these "reflect conditions that both result from and produce serious problems" (p. 8), but it fails to list the factors precipitating delayed education yet at the same time identifies its consequences: "boredom with materials designed for younger students, feeling out of place, being labeled a slow learner by the teacher and other students, being blamed for disruptions and losing interest, and a lack of normal social life with children of similar ages" (p. 5). It is precisely the reasons for delayed education that minority groups should be concerned with, together with policy makers, since these may very well be linked to their levels of well-being (broadly measured by cash income, net worth of assets owned by family, endowment of human capital, variability of income over time, intrafamily transfers, impact of government expenditures and taxes, leisure and non-market productive activities -- as conceived by Moon and Smolensky, 1977).

In the context of high school and college completion rates, overlooking input variables like simple out-of-pocket costs to family income as in the Radner and Miller report prepared for the Carnegie Commission on Higher Education (1975) and percentage enrolled full- vs. part-time may be doing great disservice to minority groups. This of course is

the basis for compensatory education which involves allocating more than average resources to the education of students with disadvantaged backgrounds, e.g., specialized programs, increased quality of teachers, increased number of counselors, improved facilities, etc. (Radner and Miller, p. 8).

B. The NCES Study of Educational Opportunity

The task of developing input indicators of education has been initiated by the NCES but pending the availability of detailed measures affecting Asian Americans no generalization can be made concerning their model-ness with respect to education. The basic NCES idea is to construct measures of variations in per-pupil educational resources delivered by the nation's school districts; the analysis of inequality that has been done to date is quite aggregative for purposes of discerning effects on Asian Americans however. Moreover, the indicators developed relate only to what NCES calls an administrative policy level rather than a more fundamental policy question, i.e., the input indicators are designed to answer this question: Are existing programs designed and administered so that they will actually deliver the quantity and quality of resources that have been decided for appropriation? In contrast, the fundamental policy level answers what quantity and quality of educational resources are needed to meet the educational needs of various groups in society, e.g., the handicapped, mentally retarded, specially gifted, educationally disadvantaged, those with language barriers, etc. It is this latter question which is of greater importance to the model minority thesis since overcoming initial impediments to education constitute a more meaningful norm for policy advocates.

Noting that there is no measure of benefits available to assess resource expenditures for various groups, we may nevertheless use the NCES indicators in checking out some clues as to how Asian Americans may have been affected by the distribution of resources and revenues. Two tables have been prepared for this purpose. (see Tables II-III).

Except in California, the states with the highest Asian American populations appear to be receiving more than the national norm of resources as measured by M4, the measure which NCES considers "one of the most satisfactory that is possible within the limits of the present ELSEGESIS (Census/Elementary and Secondary General Information Census) data base" (NCES, p. 32); M4 is the current expenditures with salaries controlled by degree level. In Hawaii (which is a single district thus accounting for its zero standard

TABLE II

Variation in Resources and Revenues for Education in States with Large Asian American Communication

	U.S.	CALIF.	HAWAII	ILL.	NEW YORK	WASHINGTON
RESOURCES						
M1 CURRENT EXPENDITURES						
Mean	1.00	1.06	1.04	1.08	1.50	1.13
Std. dev./Mean	27.9	22	0	15	20	15
M2 CLASSROOM TEACHERS						
Mean	1.00	0.91	1.04	1.05	1.11	0.94
Std. dev./Mean	16.9	26	0	12	9	8
M3 INSTRUCTIONAL STAFF WEIGHTED BY DEG. LEVEL						
Mean	1.00	0.91	1.06	1.05	1.14	0.96
Std. dev./Mean	17.0	34	0	13	9	8
M4 EXPENSES WITH SALARIES CONTROLLED BY EDUC. LEV.						
Mean	1.00	0.95	1.12	1.06	1.38	1.03
Std. dev./Mean	21.2	27	0	13	14	11
M5 SAME WITH REGION/URBAN SALARY VARIATION ADJ.						
Mean	1.00	0.95	0.94	1.04	1.42	1.04
Std. dev./Mean	23.3	21	0	15	18	14
M6 COMPOSITE MEASURE						
Mean	1.00	0.95	1.05	1.06	1.30	1.01
Std. dev./Mean	18.6	26	0	12	11	10
REVENUES						
LOCAL - % TO TOTAL	----	59%	1%	68%	50%	42%
Mean	1.00	1.13	0.02	1.57	1.40	0.87
Std. dev./Mean	58.4	40	0	51	41	44
STATE - % TO TOTAL		35%	85%	28%	46%	51%
Mean	1.00	0.95	1.85	0.90	1.85	1.46
Std. dev./Mean	43.3	25	0	33	25	21
FEDERAL - % TO TOTAL		6%	13%	4%	4%	7%
Mean	1.00	0.96	1.62	0.82	0.92	1.09
Std. dev./Mean	90.2	80	0	84	83	185
TOTAL NON-FEDERAL						
Mean	1.00	1.06	0.78	1.29	1.59	1.11
Std. dev./Mean	34.6	21	0	31	15	21
TOTAL						
Mean	1.00	1.05	0.84	1.26	1.54	1.11
Std. dev./Mean	31.5	19	0	29	14	21

Mean values represent percentage of resources or revenues over the national norm or single averages respectively; the word "norm" is used for resources because each district's score is based on its size and grade-level coverage. E.g., California pupils received 6% more M1 compared to the national norm.
SOURCE: NCES, Educational Opportunity, Tables IIIa and XIV.

TABLE III

Correlation of Resources and Revenues Per Pupil With Socioeconomic Variables

	UNITED STATES		CALIFORNIA		HAWAII		ILLINOIS		NEW YORK		WASHINGTON	
AMOUNT and % +/-												
Resources per pupil	1.000	21.2	0.948	26.6	1.122	0.0	1.064	12.8	1.384	13.9	1.033	11.0
Local revenue per pupil	1.000	58.4	1.130	40.2	0.022	0.0	1.569	51.1	1.402	41.4	0.865	43.6
State revenue per pupil	1.000	43.3	0.950	24.9	1.846	0.0	0.905	32.6	1.849	25.5	1.460	20.5
Federal revenue per pupil	1.000	90.2	0.964	79.5	1.616	0.0	0.821	84.1	0.922	83.3	1.088	185.4
WEALTH CORRELATION												
Resources	0.440		0.114		0.000		0.453		0.318		0.527	
Local revenue	0.744		0.706		0.000		0.821		0.801		0.681	
State revenue	-0.157		-0.374		0.000		-0.666		-0.703		-0.296	
Federal revenue	-0.272		0.337		0.000		-0.257		0.189		-0.153	
EFFORT CORRELATION												
Resources	0.618		0.246		0.000		0.235		0.382		0.070	
Local revenue	0.559		0.506		0.000		0.426		-0.042		0.513	
State revenue	0.511		0.063		0.000		0.153		0.599		0.599	
Federal revenue	-0.108		0.066		0.000		0.158		-0.427		-0.197	
URBANIZATION CORRELATION												
Resources	0.167		-0.147		0.000		0.023		-0.180		0.622	
Local revenue	0.287		0.168		0.000		0.120		0.363		0.420	
State revenue	-0.094		0.054		0.000		0.133		-0.624		-0.112	
Federal revenue	0.031		-0.014		0.000		0.364		0.714		-0.140	
ENROLLMENT CORRELATION												
Resources	0.101		-0.258		0.000		-0.152		-0.501		0.615	
Local revenue	0.185		0.239		0.000		-0.085		0.170		0.495	
State revenue	0.168		0.119		0.000		0.205		-0.429		-0.346	
Federal revenue	0.163		-0.027		0.000		0.663		0.689		-0.077	

TABLE III (CONT'D)

	UNITED STATES	CALIFORNIA	HAWAII	ILLINOIS	NEW YORK	WASHINGTON
% BLACK CORRELATION						
Resources	0.095	0.075	0.000	-0.125	-0.263	0.514
Local revenue	-0.157	0.249	0.000	-0.105	0.282	0.312
State revenue	-0.030	-0.123	0.000	0.223	-0.525	-0.236
Federal revenue	0.362	0.409	0.000	0.643	0.831	0.045
% SPANISH CORRELATION						
Resources	-0.035	-0.062	0.000	-0.084	-0.436	0.003
Local revenue	-0.043	-0.095	0.000	0.007	0.233	-0.191
State revenue	0.023	0.098	0.000	0.154	-0.457	-0.029
Federal revenue	0.170	-0.042	0.000	0.556	0.685	0.050
POVERTY CORRELATION						
Resources	-0.291	0.080	0.000	-0.273	-0.506	-0.177
Local revenue	-0.502	-0.177	0.000	-0.351	-0.136	-0.397
State revenue	0.029	-0.013	0.000	0.284	-0.148	-0.001
Federal revenue	0.476	0.392	0.000	0.628	0.739	0.188

SOURCE: NCES, Educational Opportunity, Tables XV to XVIII.

deviation), pupils are in fact receiving 12% more than the national norm and in New York this is even higher at 38%.

New York also has lower percent variation (14%) compared to the national standard deviation/mean of 21.2% while California has this at a higher figure, 27%. This is not due to revenue sources however since New York depends on Federal funds (4%) to about the same extent as California (6%). The percent variations suggest that around 1/6 of New York (or California respectively) pupils received 14% (or 27% respectively) more than the New York (California) norm and another 1/6 received 14% (27%) less (NCES, p. 38).

Illinois scores consistently above the national norm in all six resource indicators while Washington is weak in M2 and M3, classroom teacher per pupil and instructional staff weighted by degree level, respectively. These preceding broad brushstrokes do not of course tell us how Asian American populations are directly affected; the next table is of greater help in discerning to what extent educational resources may bear upon certain groups.

The first set of numbers in Table III repeats data from the earlier Table, except that only M4 is used for resources per pupil. These summary numbers can help decipher the relative position of the five states with high Asian American population in the context of amounts and correlation of resources and revenues with selected socioeconomic indicators throughout the U.S.

For example, despite its higher value than the national norm for resource indicator and its lower percent variation, New York's resources have relatively high negative correlations with the enrollment, % Black, % Spanish, and poverty socioeconomic variables. In other words, districts with large enrollments, more Blacks and Hispanics and more pupils in poverty levels tend to deliver fewer resources to their communities (NCES, p. 41, has similar interpretation for Mississippi) compared to the national norm. While Federal revenues positively correlate with these socioeconomic variables, the State revenues exhibit negative correlation, thus explaining the resource maldistribution to these districts.

The same story emerges in Illinois for these same four socioeconomic variables correlation with resources although the problem appears rooted more in local finance.

In California the negative resource correlations with urbanization, enrollment, and % Spanish appear to be weakly offset, if at all, by the relatively low positive correlation with poverty and % Black. Where one or two resource sources appear to be biased against certain sectors as represented by the socioeconomic variables, the other revenue resource(s) could hardly compensate for the negative correlation. On a more positive note however, Federal revenue relatively appears to help districts with high poverty and % Blacks -- which is true in other states as well.

The situation in Washington is "better" since here the resource correlation is negative only with respect to poverty and practically insignificant for % Spanish. For both these variables the negative local and State revenue correlations are not compensated for by Federal revenues.

Although none of the data in Tables II and III refer to Asian Americans, they suggest that the model minority thesis should at least be suspect. The negative resource correlations with poverty alone should convince the thesis proponents that full and equal participation of Asian Americans in education appear dubious, considering data from the Commission on Civil Rights Report (pp. 60-66): Chinese-Americans are 1.89 times more likely to fall into poverty than the majority population; this goes up to 2.11 for female-headed families among them and to 2.22 for Pilipino Americans.

Similarly, the percentage of Asian American households outside of the central city may be working against them in California and New York where urbanization correlates negatively with resources for edcuation. The Commission on Civil Rights (pp. 70-71) notes that in 1970 Japanese-, Chinese-, and Pilipino-American-headed households were 80%, 59%, and 56% respectively as likely to be situated outside of the central city as were majority-headed households.

Extended Earnings Differential Models to Education

The most developed and applied model in the context of an input-process-output framework to analyze inter-racial, inter-ethnic, or inter-sex economic differentials is one centered on income. It is this approach which the Commission on Civil Rights used in its study to show that Asian Americans do not indeed belong to a model minority. What is being proposed in this section is that the same model be extended to education so that factors inhibiting the full and equal

participation of minority groups may be empirically verified. To the knowledge of this author, no work has yet been done in this area, but it will be shown that it is a more conceptually valid approach in examining the well-being of racial, ethnic, or any other group when it comes to education.

Table IV presents the results of an exercise to identify factors working against Asian Americans in deriving their incomes. Although the basic data is culled from the Commission on Civil Rights Report, the more important elements of discrimination implicit in the methodology followed by the writers were left unexplored; these are what I concentrate on in the table.

This table can be extended to the analysis of educational attainment differentials across ethnic groups given several explanatory variables determining years of school completed. The idea is to estimate the inter-ethnic gap based on separate regressions for the norm (majority males) and the several ethnic groups, and thereafter to break down this gap into two components: differences in the regression coefficients (typically identified as the result of discrimination) and differences in the mean values of the explanatory variables (typically isolated from discrimination concerns). A detailed exposition of the methodology can clarify these points.

Following the COCR Appendix B exposition, consider six variables that may explain variations in ethnic incomes, or alternatively as is being proposed here, variations in ethnic educational attainments. The choice of the variables should be based on theories of several disciplines. For example, the COCR model uses X1 = age, X2 = educational attainment, X3 = prestige score for worker's occupation, X4 = mean income of the worker's State (a surrogate for regional cost of living), X5 = number of weeks worked during the preceding year, and X6 = number of hours worked in the week preceding the Census date (since Census data were utilized); these six variables are suggested by economic and sociological theories. For the proposed regression analysis of differences in educational attainment, the interdisciplinary approach should also consider variables from the educational and social psychology literatures.

Gilmartin's study of the status of women and minorities in education (June 1979) is particularly instructive in this regard although it has minimal reference to Asian Americans. Major variables related to eight issue areas in the literature on the subject are presented in his work, most pertinent of which with respect to this present study are educational

TABLE IV

Factors Affecting Earnings Differential Between
Majority Males and Asian Americans, 1959, 1969 and 1975
(in dollars per capita)

A.	REGRESSION-BASED TOTAL EARNINGS GAP			DUE TO DIFFERENCES IN COEFFICIENTS			DUE TO DIFFERENCES IN MEAN VALUES OF SIX EXPLANATORY VARIABLES		
	1959	1969	1975	1959	1969	1975	1959	1969	1975
CHINESE - M	598	1149	1088	904	1720	2610	-306	-571	-1522
F	2730	4784	4668	2206	3802	3467	524	982	1201
JAPANESE - M	227	-9	1188	879	787	1428	-652	-796	-240
F	2819	4532	5546	2458	3847	4757	361	685	789
PILIPINOS - M	1766	2298	61	1662	1600	-447	104	698	508
F	3101	4651	4643	2507	4154	4715	594	497	-72

ILLUSTRATIVE EXAMPLE, EQUATION 3 DECOMPOSITION, 1975

	X1=AGE	X2=SCHOOL	X3=PRESTIGE	X4=RESIDENCE	X5=WEEKS WORKED	X6=HOURS PER WEEK
B. DUE TO DIFFERENCES IN COEFFICIENTS			$(B_W - 13_N) X_W$			
CHINESE - M	-97	-875	-343	4,878	303	981
F	1,115	5,640	-1,252	2,367	2,400	1,566
JAPANESE - M	-307	1.524	-974	-6,910	662	-1,842
F	2,003	-5,364	2,597	-1,647	4,972	-1,360
PILIPINOS - M	2,919	4,771	-2,047	8,580	-236	-1,537
F	2,235	1,762	1,918	2,916	1,947	2,737
C. DUE TO DIFFERENCES IN ENDOWMENTS			$B_N (\bar{X}_W - \bar{X}_N)$			
CHINESE - M	-13	-401	-898	-80	-215	-74
F	206	51	-2	-276	-837	385
JAPANESE - M	-348	-179	-169	-1,712	-413	204
F	-11	-48	256	-867	-203	1,254
PILIPINOS - M	-7	34	-170	709	-514	116
F	177	-282	-181	-213	247	180

SOURCE OF BASIC DATA: COMMISSION ON CIVIL RIGHTS, SOCIAL INDICATORS OF EQUALITY FOR MINORITIES AND WOMEN

aspirations and educational attainment. In one sense, a group's educational attainment may be viewed definitionally as a composite of the probability of enrollment in the next educational stage, retention and drop-out rates, and of subject matters as measured by prestige scores. Behaviorally, however, the determinants of the group's educational attainment include demand elements like X1 = educational aspirations, X2 = mental ability, X3 = financial ability, X4 = propinquity to college (variables cited in Havighurst and Neugarten, p. 92) and supply elements like X5 = admissions policies, X6 = employment of minorities and women as teachers and administrators (role models).

All these demand and supply elements have to be empirically translated for multivariate regression save for those qualitative variables that may be included in dummy form; needless to say, each element may be further made functions of other variables and a system of simultaneous equations thereafter structured to determine endogenously the values of educational aspirations and educational attainment. Note that for Asian Americans the formulation of the educational aspirations variable, as should be true with any other minority group, must recognize institutional barriers to higher incomes through routes other than education, and similar forces uniquely impinging on them.

Returning to the methodology to examine income differences, consider the case of Chinese females vis-a-vis the male majority in 1975. Regressions using their own group data predict the respective earnings to be $6759 and $11427, or a difference of $4668. Not every dollar of this difference can be imputed to one factor alone. In fact, Table IV shows that this difference can be broken down into two general categories: one that is due to their different regression coefficients representing how a unit change in each factor affects the earnings when other variables are fixed at certain levels, and another that is due to their different mean values of the X's. A simple exposition below may help explain the above.

Let $\bar{E}_W$ = earnings of majority male (W) predicted by the regression

$\bar{E}_N$ = earnings of minority (N) predicted by the regression

E_W = earnings of N based on mean values of W plugged into the N regression equation

E_N = earnings of W based on mean values of N plugged into the W regression equation

Then the earnings gap $\bar{E}_W - \bar{E}_N$ can be decomposed as follows:

(1) $\bar{E}_W - \bar{E}_N = (\bar{E}_W - E_W) + (E_W - \bar{E}_N)$ or alternatively as

(2) $\bar{E}_W - \bar{E}_N = (\bar{E}_W - E_N) + (E_N - \bar{E}_N)$

Since $\bar{E}_W = B_W X_W$, $E_N = B_W X_N$, $\bar{E}_N = B_N X_N$, and $E_W = B_N X_W$, then the first decomposition becomes

(3) $\bar{E}_W - \bar{E}_N = (B_W - B_N) X_W + B_N (X_W - X_N)$

where the first term in parenthesis is that portion of the earnings gaps attributable to the coefficients and the second part is attributable to the endowments. (The decomposition may also be done for Equation 2 and the same parts will be arrived at.)

Focusing on the E_W term, note that its intuitive explanation is that had all of the X values of majority males been attained by Chinese females in 1975, then their incomes would have been \$7960 instead of \$6759 -- that is, had Chinese females been on the average been as old as majority males and not 3.187 years younger, and had equal mean values for all other X's as the majority males and not 0.1741 more in the scaled educational attainment (X2), not 0.01 more in prestige score (X3), not lived in a State that has \$548.30 more in the cost of living (X4), had not 5.657 points more in the scaled weeks worked variable (X5) and had not 5.674 points less in the scaled hours worked in the week preceding April 1, 1975 (X6).

In the second part of Equation 1, the lower income $\bar{E}_N$ relative to E_W cannot be viewed aggregatively as an argument against the model minority thesis just as higher $\bar{E}_N$ relative to E_W (as in the case of Japanese males, 1975, where $\bar{E}_N$ = \$12,615 and E_W = \$9,999) cannot be used to support the same thesis. Note that age (X1) and cost of living in State of residence (X4) are not as equally likely to be the sources of potential discriminatory practices/experiences as X2, X3, X5 and X6. In the literature on the economics of labor markets, however, all these variables in $(E_W - \bar{E}_N)$, the second part of the earnings gap, are not counted as part of discrimination at all (Blinder; Masters; Oaxaca) since the differences in endowments are all assumed to be avoidable. However, endowments may be different precisely because of institutional forms of discrimination, e.g. X4 = weeks worked may

be significantly greater for Asian Americans because they have to overcome slower promotions through extra work days.

What the literature on the economics of labor markets counts as part of the discrimination problem, and which the COCR report omits completely, is the first term of Equation 3, $(B_W - B_N) X_W$ since this "exists only because the market evaluates differently the identical bundles of traits possessed by members of different demographic groups" (Blinder, p. 439). Note that in Table IV, Sec. A., except for male Pilipinos in 1975, all of the earnings differential due to the coefficients are positive, indicating the existence of labor market discrimination in generating incomes for all Asian American groups -- certainly an argument against the model minority thesis. That Chinese and Japanese males compensate for this discrimination through the six explanatory variables used in the regression (the other component in Equation 3) is not reason to be content with the fact that institutionalized forces may have lead Asian Americans to amass more advantageous endowments at very high costs, psychic or otherwise, especially in view of the educational resource maldistribution as the earlier section brought out.

A deeper look at a source of discrimination based on the traditional economic analysis (Section B of Table IV) suggests that a one point increase in the educational attainment scale effects higher incomes for Chinese females, Pilipino males and females, and Japanese males but at lower levels compared to majority males. The results for Pilipino females and Japanese males should be noted carefully in view of their higher educational attainments (Section C, Table IV). When dovetailed, these data indicate that higher education does not preclude discriminatory effects against them.

Consider another major source of discrimination against Chinese and Pilipinos, the State of residence income used as surrogate for cost of living. Traditional economic analysis would suggest that had Pilipino males lived in a State with an additional dollar more in mean income, they would have received $8,580 more compared to the majority males. This interpretation suggests that Pilipino males live in areas where discrimination is rooted in relatively lower incomes, i.e., the lower the level of State income or the cost of living, the greater is the discrimination in the form of lower personal earnings, assuming all other characteristics in the regression, all the other X's, are equal for both Pilipino and majority males.

While the negative numbers in Section B of Table IV imply the non-existence of discrimination, the similarly-signed data in Section C need not, as argued earlier, since the differences in endowments may precisely be due to institutional discrimination. These conclusions are nevertheless highly dependent on the statistical validity of the COCR Table B-1 where no significance levels for the regression coefficients and R^2 values are reported, notwithstanding the COCR admonition that "readers (be) encouraged to view (the) statistical tests as only one part of the larger statistical decision making context rather than as a critical and firm standard" (p. 109).

The foregoing earnings differential decomposition and analysis could very well be conducted for explaining education differentials between majority males and Asian American groups. Instead of E standing for earnings, it could represent education indices (years of schooling adjusted for quality, prestige, etc.) Then, after regressions based on supply and demand variables, the discriminatory and endowments components of education indices differentials can be estimated. But this is properly the subject of another paper.

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